

WHAT IS CLAIMED IS:

1. An isolated nucleic acid of any one of (a) to (d) below:
 - (a) a nucleic acid encoding a protein comprising the amino acid sequence of any one of SEQ ID NOs:2, 4 or 17,
 - (b) a nucleic acid comprising a coding region in the nucleotide sequence of any one of SEQ ID NOs:1, 3 or 16,
 - (c) a nucleic acid encoding a protein that comprises the amino acid sequence of any one of SEQ ID NOs:2, 4 or 17, in which one or more amino acids are replaced, deleted, inserted and/or added and that is functionally equivalent to the protein comprising the amino acid sequence of any one of SEQ ID NOs:2, 4 or 17, and
 - (d) a nucleic acid that hybridizes under stringent conditions with the nucleic acid comprising the nucleotide sequence of any one of SEQ ID NOs:1, 3 or 16, and that encodes a protein functionally equivalent to the protein comprising the amino acid sequence of any one of SEQ ID NOs:2, 4 or 17.
2. An isolated nucleic acid encoding the amino acid sequence of any one of SEQ ID NOs:2, 4 or 17 or a fragment thereof.
3. A vector into which the nucleic acid of claim 1 is inserted.
4. A vector into which the nucleic acid of claim 2 is inserted.
5. A transformant harboring the nucleic acid of claim 1.
6. A transformant harboring the nucleic acid of claim 2.
7. A transformant harboring the vector of claim 3.
8. A transformant harboring the vector of claim 4.
9. A substantially purified polypeptide encoded by the nucleic acid of claim 1.
10. A substantially purified polypeptide encoded by the nucleic acid of claim 2.

11. A method for producing a polypeptide, the method comprising the steps of culturing the transformant of claim 5 and recovering a polypeptide expressed from the transformant or the culture supernatant thereof.

12. A method for producing a polypeptide, the method comprising the steps of culturing the transformant of claim 6 and recovering a polypeptide expressed from the transformant or the culture supernatant thereof.

13. A method for screening for a compound that binds to a polypeptide, the method comprising the steps of:

(a) contacting a test sample with the polypeptide of claim 9 or a partial peptide thereof,

(b) detecting a binding activity of the test sample to the polypeptide or the partial peptide thereof, and

(c) selecting a compound comprising the binding activity to the polypeptide or the partial peptide thereof.

14. A method for screening for a compound that binds to a polypeptide, the method comprising the steps of:

(a) contacting a test sample with the polypeptide of claim 10 or a partial peptide thereof,

(b) detecting a binding activity of the test sample to the polypeptide or the partial peptide thereof, and

(c) selecting a compound comprising the binding activity to the polypeptide or the partial peptide thereof.

15. An antibody against the polypeptide of claim 9.

16. An antibody against the polypeptide of claim 10.

17. A method of detecting a hemopoietin receptor protein in a test sample, comprising the steps of: contacting a test sample with the antibody of claim 15; and detecting

3 the presence of an immune complex between the antibody and a hemopoietin receptor
4 protein in the test sample.

1 18. A method of detecting a hemopoietin receptor protein in a test sample,
2 comprising the steps of: contacting a test sample with the antibody of claim 16; and detecting
3 the presence of an immune complex between the antibody and a hemopoietin receptor
4 protein in the test sample.

1 19. A polynucleotide that hybridizes with the nucleic acid comprising the
2 nucleotide sequence of any one of SEQ ID NOs:1, 3 or 16 or the complementary strand
3 thereof and that comprises at least 15 nucleotides.